

1st Session of the Agriculture Subcommittee
Kindersley Centre, Berkshire, United Kingdom
1 December 2006

Meeting Minutes

Summary

The first session of the Methane to Markets (M2M) Agriculture Subcommittee was held at the Kindersley Centre in Berkshire, United Kingdom. The agriculture sector had met previously as a task force, but this was the first meeting since the sector had been upgraded by the Steering Committee to “subcommittee” status.

The subcommittee meeting was preceded by a two-day M2M agriculture workshop, organized by the UK’s Department for Food and Rural Affairs (DEFRA). During the workshop, several country delegates, researchers, and private sector stakeholders from around the world gave presentations related to anaerobic digestion (AD) technology and policy. A summary report from the workshop will be provided by DEFRA and made available on the M2M website.

Key goals of the meeting were to share new country profile information, prepare for the upcoming M2M Expo, and discuss/adopt an action plan for the agriculture subcommittee. The following sections provide more details of the meeting discussion and each topic covered in the agenda. The meeting agenda and a list of attendees can be found in Annexes 1 and 2 to these minutes.

Opening Statements and Adoption of the Meeting Agenda

Co-chairs Mr. Jeremy Eppel of the United Kingdom and Mr. Jorge Hilbert of Argentina opened the meeting and ratified the meeting agenda. Mr. Eppel welcomed everyone to the meeting and thanked them for participating in the meeting as well as the preceding two-day workshop. He regretted that several partner country delegates could not attend the meeting and hoped that future meetings would be attended by representatives from all the partner countries, especially Mexico and other countries with good opportunities for agricultural methane capture and use. Mr. Eppel was pleased at the positive feedback he had received regarding the workshop and hoped that the knowledge sharing and lessons learned would have a positive impact on the subcommittee meeting.

Many of the country delegates had already given presentations at the workshop that highlighted methane capture and use from agriculture in their countries. Therefore, to be most efficient Mr. Eppel suggested that during the next agenda item of sharing country statements, we should allow more time on the floor for countries that had not yet presented information from their profiles;

countries that had shared during the workshop should not recap their entire profile, but rather highlight specific items of interest for the subcommittee.

Country Statements and Reflections on the Workshop

Mr. Hilbert chaired this agenda item. Each country in alphabetical order shared their reflections on the workshop and highlights from their country profile. Mr. Hilbert opened the floor for questions following each presentation.

Australia

Ms. Heather Tomlinson of Australia's Department of Agriculture, Fisheries, and Forestry highlighted items from her country profile and government policy related to the M2M Agriculture Sector. She said that the biggest agricultural industry change has been a shift in the swine sector. Swine operations are increasing in size and changing their waste management processes as compared to years past. Another shift in the agriculture industry has been the changing role of agriculture from providing food and fiber to energy production and environmental services. Australia plans to update its country profile after the subcommittee meeting to reflect this change.

Ms. Tomlinson also stated that the current drought in Australia has increased the media attention and political interest in climate change issues. Australian government agencies at all levels are working with industry to develop a coordinated framework for climate change policy in agriculture. In August 2006, Australia released a national agriculture and climate change action plan for 2006 through 2009. This plan has four main focuses:

- Adapt agricultural systems to be resilient to climate change;
- Mitigate greenhouse gas (GHG) emissions from agriculture;
- Enhance capacity in research, development and innovation to address the challenges of climate change in agriculture; and
- Improve the understanding of climate change issues by Australian agriculture industries and rural communities to enable them to make informed decisions.

Methane management from agricultural sources is included in Australia's climate change action plan. Actions to reduce methane emissions include promoting research and development in methane and nitrogen emission management for integration into best management practices. The current Australian government priorities related to M2M are: communicating with industry, support of M2M projects, participating in the 2007 Expo, and updating the country profile. The ongoing climate change initiatives in Australia support and promote the M2M agenda, and Australia anticipates a continued active role in the partnership.

Argentina

Mr. Jorge Hilbert of INTA (the National Institute of Agricultural Technology) offered a short presentation highlighting issues of interest from Argentina's country profile. Mr. Hilbert first shared some reflections on what he had learned from the workshop:

- High-tech AD is not widely available; many of these digesters are managed by private (mainly European) enterprises.
- There are different views regarding the reliability of AD plants.
- There are many facilities operating with relatively high solid contents (20 % or more) at mesophilic and thermophilic temperatures.
- There is an important growth in CDM projects involving Latin American countries.
- There are big concerns regarding biosecurity and human health that are being addressed through AD plants operating at increased temperatures.
- There are operating AD plants in very low temperature climates.
- There is some technical experience in the practice of upgrading biogas to a second generation biofuel.
- Interesting figures were presented regarding the use of AD feedstocks other than livestock manure, such as corn silage and glycerol.
- Technology regarding primary treatment and transport of livestock waste must be analyzed in order to find specific applications in some large areas with many dairy farms.
- Soil interaction and atmospheric emissions of AD systems must be studied in greater depth (including CO₂ NO_x and other gases).
- Knowledge regarding AD project failures in different countries must be shared in order to learn and prevent the same mistakes for future endeavors.
- Denmark, Germany, and the UK are potential advanced technology suppliers.
- Germany's AD partnership model and their experience from operating over 2,000 digesters must be analyzed.
- Analysis of AD technology and use needs to incorporate other environmental and social aspects involved.
- Comparisons of AD versus other alternative technologies should be done to determine which technologies are most successful and cost-effective.
- When comparing the cost of on-farm generated electricity versus electricity from the grid, the shadow costs of commercial energy should be taken into account.

After sharing these reflections on lessons learned from the workshop, Mr. Hilbert moved onto discussing methane and agriculture in his country. He began with a summary of the key drivers for successful AD programs, as discussed in the workshop, and then addressed Argentina's drawbacks and advantages regarding AD implementation in the agriculture industry. Barriers or drawbacks to AD include:

- Very low internal energy prices of diesel oil, which is the principal energy source of the agricultural sector (\$0.50/liter – USD);
- General perception of AD as being unreliable, unproven, having a low energy output, high cost, and uncertain benefits;
- No private sector companies dedicated to this technology in the country;
- Farmers do not comply with many environmental legislation regulations, so there is a lack of incentive to use AD to comply with air quality regulations;
- Regulations are confusing and different depending municipal, state or federal jurisdiction;
- No integrated research and extension plans regarding manure treatment; and
- Clean Development Mechanism (CDM) procedures are complicated, expensive, and require that all local laws are respected.

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Advantages in favor of establishing AD in Argentinean agriculture include:

- Increasing shortage of diesel fuel in many areas of Argentina;
- Unbalance between national production and consumption of diesel that must be mitigated by importing diesel and exporting gasoline;
- Increasing concern about the future of energy supply since oil and gas reserves are presently no more than 15 years and the country's energy matrix depends more than 90 % from petrol and gas.
- Increasing concern regarding future global market restrictions on products coming from countries that do not comply with environmental standards;
- Farmers are starting to look and invest in alternative fuels. Biodiesel and alcohol are the most popular;
- New national research and extension program of INTA considering energy production and residue treatment in agriculture and agro industry. A national network is under construction;
- Increasing concern in government politics to develop different regions of the country with local alternatives.

Brazil

Ms. Magda Aparecida de Lima from EMBRAPA (Brazilian Administration of Agricultural Research) presented a summary of Brazil's agriculture country profile. First, Ms. Lima presented some agricultural statistics including livestock populations; waste management system allocations for beef, dairy, swine, sheep, and other livestock; and methane emissions from various agricultural sectors. These data are included in the Brazil country profile which can be found on the M2M website. In response to a question, Ms. Lima clarified the data sources for these statistics. Some statistics are published only in the agriculture census, for which the most recent year is 1994. (Brazil is currently undertaking another census, which will be published in 2008.) Other statistics are available from other sources; Ms. Lima used the most recent available year for all statistics, but data sources ranged from 1994 to 2005. Ms. Lima echoed the sentiments of others at the workshop and subcommittee meeting that she was concerned about the lack of standards for baseline GHG emission calculations.

Ms. Lima then discussed the use of AD on farms, and pointed out that the 1994 census showed that digesters were used in less than 1% of all waste management systems. She suspects this percentage is higher now, but still many barriers remain to widespread use of AD. In the 1970's and 80's, government programs created incentives to use AD but didn't provide the necessary framework for success of the program. As a result, most of the digesters installed under this program are no longer functioning. Recently, CDM projects have spurred a renewed interest in AD. Brazil currently has 5 CDM projects underway, although the majority pertain to the energy sector. Still the cost of AD remains prohibitively high for most farmers; a typical AD system costs approximately \$13,000 (USD). Also, there are still many policy and regulation barriers at the national level that impede the use of AD. As a result, local rather than national initiatives drive AD projects in Brazil.

Current AD projects and research in Brazil are focused on swine and poultry manure. Ms. Lima indicated that AD is not usually economically viable for beef cattle operations as they are usually managed on pasture systems and relocated to feedlots for only a short portion of their lifespan. Mr. Bill Hohenstein commented that although increased use of AD in Brazil may not reduce Brazil's baseline 1994 emissions, it might provide enough benefit to keep up with GHG emission changes as the agriculture industry shifts from pasture to feedlot management. Ms. Lima was queried about the environmental requirements for manure management in Brazil, to which she responded that there are only local environmental requirements, nothing at the federal level.

Canada

Ms. Aimee Johnston of Agriculture and Agri-Food Canada served as the country delegate. Dr. Carolos Monreal of Agriculture and Agri-Food Canada also represented Canada and contributed to the information presented at the meeting. Ms. Johnston highlighted some of the environmental issues at the forefront in Canada and presented a summary of their country profile.

Canada has some current legislation underway, the Clean Air Act, which is the main environmental legislation for air, soil, water, and GHG pollution issues. Canada's governmental policies regarding agriculture are to support profitable and competitive industries, provide access to resources, and to reduce the environmental impacts of agriculture. Regarding GHG and M2M issues, Canada's focus has been on biofuels but is now shifting to include other clean renewable energy systems and technologies. AD fits in well with this new clean energy agenda in Canada. Ms. Johnston quoted a statistic that if 30% of the livestock manure were treated with anaerobic digesters, GHG emissions reductions would be 30 MTCO₂E.

The current status of Canada's agriculture sector is that animal populations have increased but are not evenly distributed. They are seeing a movement towards larger farms. Currently there are 10 anaerobic digesters in operation in the country, and finance is the main barrier to greater use of AD. Policy challenges to AD are that there is no clear responsible party for changing agriculture and increasing AD use; there is a debate whether the onus rests on public or private enterprises.

Canada hopes that participation in the M2M partnership will strengthen its relations with other countries and allow a global sharing of technologies and policy strategies. Ms. Johnston said she was pleased to have received new policy ideas and objectives at the workshop that she can share with other policy makers in Canada. In the future, she thinks that Canada would benefit from linking AD to ethanol production sites, and increase the export of fertilizer made from the AD process.

China

Mr. Jingming Li of the China Biogas Society served as China's country delegate and summarized the status of AD in China. Mr. Li had presented data and case studies from China at the workshop, so he did not reiterate these facts in detail at the subcommittee meeting.

Mr. Li explained that the last 100 years of government policy regarding agriculture have emphasized improving production output as well as farmer's lives. Biogas has been an efficient solution for GHG reduction, energy security, environmental benefits, and renewable energy. The State Council and Ministry of Agriculture have prepared a long-term plan for biogas generation and use. China has a complete AD/biogas framework for the whole country with funds for biogas projects at 2 billion yuan this year (doubling last year's budget of 1 billion yuan).

Mr. Li reflected that although China has shown enormous success with biogas, at least four barriers to greater success still remain. First, Mr. Li would like to see increased funding for research and development (R&D). Most of the current Chinese budget for AD/biogas is spent on information and technology dissemination instead of R&D to improve the efficiency of AD plants. Secondly, China's biogas initiative has limited cooperation with other sectors, both domestic and international. Their biogas initiative is focused on the agriculture sector only, and may be missing out on valuable collaborative opportunities with other industries. Thirdly, China is focused almost exclusively on small-scale household AD systems, and not paying enough attention to large-scale biogas plants. Lastly, China has a limited information exchange about AD technology and policy. Mr. Li was pleased and impressed with the workshop and M2M initiatives to increase information exchange and education about AD. He feels that education at all levels from the farmer to the businessman to the top policy maker is vital to the success of AD.

Mr. Li concluded with a statement that China is the world's biggest biogas producer and user and would like to continue contributing to the M2M partnership. His country is looking forward to hosting the Expo in October 2007.

After Mr. Li's presentation, several delegates had questions for Mr. Li. Ms. Heather Tomlinson of Australia asked Mr. Li about China's plans for the future growth of AD technology in the country. Mr. Li said the country plans to increase the number of households using biogas from the current 18 million to 40 million in 2010 and 85 million in 2015.

Mr. Kurt Roos of the United States requested more information about the digester technology used in China, and whether there are design standards in place. Mr. Li responded that China has national and local standards for AD design as well as the biogas lamps and cook stoves that are coupled with AD systems. Mr. Li said that most of the digesters in China are designed to maximize energy production, not necessarily GHG reduction and they have not yet replaced older AD designs with newer, more efficient ones. Again, the major focus in China has been building the national infrastructure to increase biogas recovery and use, rather than improving AD technology.

Mr. Eppel commended Mr. Li on the innovative and successful plan China has implemented to recycle livestock waste into a sustainable energy source. Mr. Eppel affirmed that the rest of the M2M partnership could benefit a great deal from China's example and he urged Mr. Li to turn in a complete text country profile. (At the time of the meeting, Mr. Li had assembled country profile information in a Microsoft Powerpoint[®] document, rather than the official country profile format.) Mr. Li said he would provide a full country profile to the ASG as soon as possible after the meeting.

India

Dr. Vallentyne Vinod Niranjana (V.V.N.) Kishore of the Energy and Resources Institute in New Delhi served as the country delegate for India. Dr. Kishore had also previously given a presentation at the workshop with case studies of AD use in India, and therefore did not present data at the subcommittee meeting that was already covered in his presentation.

Dr. Kishore was pleased to hear about new AD technologies discussed at the workshop, especially those designed for high solids manure systems, which match typical situations in India where AD is used to treat dairy cattle manure. Dr. Kishore acknowledged that the majority of methane emissions from agriculture in India come from rice cultivation. However, although the percent of methane from livestock manure management is in the minority, the total emissions (23.2 MTCO₂E) are still significant and changes to manure management could still have a positive impact on global GHG emissions. Dr. Kishore suspects that farms in India are following the same global trend of consolidating and getting larger, but no reliable data exist. He suggested that a data collection effort could be coupled with market research for AD.

Mr. Kishore went on to describe the policy climate and current use of AD in India. The government has a program (\$100 million/year USD) that subsidizes small AD projects that produce electricity. There is no current program for large-scale farm AD, but the country could benefit from such a program. Dr. Kishore explained that the barriers to increased AD use are generally a lack of education about how to use AD on a farm scale in the scientific community and a lack of education about the benefits of AD among industry and policy makers. Dr. Kishore would like to have a workshop in India for knowledge sharing. In addition to a need for greater education about AD, Dr. Kishore believes that India could benefit from exploring alternative policies such as a cost-sharing program that would enhance the economic situation of AD instead of relying solely on government subsidies as the AD incentive.

Dr. Kishore summarized India's needs from the M2M partnership as follows:

- European Union (EU) partnerships for technology training and financing
- Technology demonstrations and knowledge sharing
- Cost-sharing program with other partner countries or project network members to increase AD use and feasibility

Italy

Mr. Luigi Mauro Martire from Italy's Ministry of the Environment, Land, and Sea served as the country delegate and summarized the status of agriculture and methane issues in Italy. (Italy has not yet delivered a country profile to the ASG.)

Mr. Martire said that Italy was one of the first EU countries to adopt agriculture practices with the environment in mind; as a result, methane emissions were reduced from this sector. Italy has some AD power plants that practice co-generation with agricultural and industrial waste. Italy is also cooperating with China for biogas recovery in a dairy and other CDM projects.

Italy has several initiatives that address methane in agriculture, including Global Energy Partnership from G8, which provides a mechanism for cooperation in biogas technology R&D and policy framework for project development. The Global Energy Partnership creates a bridge between various countries and provides opportunity for synergy with M2M and other programs.

United Kingdom

Mr. Phillip Andrews of DEFRA in the United Kingdom served as the country representative. Since many lectures and case studies were presented at the workshop describing the state of AD in the UK, Mr. Andrews used this opportunity in the meeting to highlight a few of the key issues, rather than summarize the UK country profile.

Mr. Andrews stated that agriculture is responsible for 7% of the total GHG emissions and 30% of the methane emissions in the UK. AD is still a small industry, but the current UK sustainable agriculture and climate change agendas are pushing greater acceptance and use of AD technology. The “one planet” farming initiative encourages the agriculture sector to reduce its environmental impact and AD may play a key role in meeting this goal in the future.

Mr. Andrews conveyed the following UK goals of their involvement in the M2M partnership and use of AD technology: having a low carbon economy, recovering energy and reducing environmental impacts of food and bio-waste streams, encouraging a profitable agriculture industry, and reducing GHG emissions. To these ends, the UK government is seeking active engagement with all national and international stakeholders in AD.

United States of America

Mr. Bill Hohenstein of the United States Department of Agriculture (USDA) served as the country delegate. Ms. Kelsi Bracmort from USDA and Mr. Kurt Roos of the Environmental Protection Agency (EPA) also represented the US and contributed to the information presented at the meeting.

Mr. Hohenstein began his summary of the country profile by updating some of the information since the profile was first drafted in 2005. Mr. Hohenstein said that the number of anaerobic digesters planned or installed should be updated to 184 (instead of 170 as quoted in 2005).

Mr. Hohenstein said that the US is continuing to support domestic international programs with grants and cost-sharing opportunities for AD implementation. One example is an EPA grant program through M2M that is expected to fund approximately 20 projects with a total award of \$2 million (USD). EPA is accepting proposals from all parties through 3 January 2007; proposals from government agencies will continue to be accepted after this date. USDA plans to support M2M in 2007 in the context of the action plan (i.e., reviewing accounting systems for emissions, engaging the private sector, continuing support for the ASG).

Mr. Hohenstein then summarized his reaction to the previous days’ workshop. He realized that each country’s situation is different and important to consider in the context of AD; also he was reminded that the role of government is critical to the success of AD.

After Mr. Hohenstein's presentation, Mr. Eppel commented that the US trend in livestock agriculture is consistently moving towards a concentration of agriculture across all sectors, which is driven by the economy of scale and transportation costs for livestock.

Ms. Tomlinson queried the US representatives about the make-up of the 184 operating digesters. Mr. Roos responded that these are mostly a mix of swine and dairy manure digesters. Additional projects to co-locate feedlots and ethanol plants are under development but are capital-intensive. Mr. Roos also commented that the US is developing a national protocol to evaluate AD systems equally. This will be a written document that specifies sampling protocols, tiered analysis, confidence levels, and reporting practices. The US is currently working with the World Bank on AD projects in China and Southeast Asia.

Project Network Member Statements and Reflections on the Workshop

This agenda item was omitted since no project members were present at the meeting. (One project member, Ms. Okwuoma Jane Nwoke, did join the meeting after this agenda item had passed.)

Update from the Administrative Support Group

Ms. Erin Birgfeld of the US EPA chairs the M2M Administrative Support Group (ASG) and offered an update on overall M2M activities in all sectors. Ms. Birgfeld began by announcing that Germany had joined the M2M partnership and Poland had announced its intent to join.

Ms. Birgfeld then provided details on the Partnership Expo that will be held in Beijing, China in October 2007. This is a high profile event designed to highlight all sectors and showcase projects to enhance funding opportunities and show the effectiveness of the partnership. Country delegates should consider what information is needed about agriculture projects in order to attract investors. The venue will be the China World Hotel. M2M has an Expo task force to help prepare for this event, but input and support will be needed from all sectors as well. Each country will get one booth at the Expo; other booths will be rented as a source of revenue to help cover travel costs for those in need. In the same vein, there will also be a sliding scale registration fee to attend the Expo. Ms. Birgfeld reminded members of the agriculture sector that they should bring up Expo issues they want to discuss at the next Expo task force meeting.

The agriculture sector has several responsibilities to prepare for the Expo. The sector must plan a 1 ½ day workshop to be held at the Expo as well as identify projects to be showcased. Ms. Birgfeld introduced a new project/activity on-line tracking database that will store information on M2M related projects. This database will house information on M2M projects and activities (e.g., workshops, conferences, etc.) to increase global awareness of M2M actions and provide a way to match up areas of need with private enterprise or governments that can help. She instructed meeting attendees to enter projects from their countries into this database, which will provide a pool of projects and activities to be highlighted at the Expo. Ms. Birgfeld also announced that training sessions for how to use this system will be provided in January and February 2007. Additional discussion about the database among meeting attendees followed.

Mr. Hohenstein commented that there are many different types of projects within the agriculture sector, some requiring support, and others already up and running. He asked whether projects need to have an international collaboration aspect to be included in the database. Ms. Birgfeld responded that the only criterion is that the project should involve a M2M partner country.

Mr. Eppel then summarized what he viewed as the three main purposes of the project tracking database: track ongoing projects, post proposed projects with technology or financing gaps in hopes of matching them up with the help they need, and identify projects to highlight at the Expo. Dr. Monreal commented that countries may already have databases with these types of projects, and it would be more efficient to provide links to these existing databases rather than reenter all of the information into the M2M database.

Mr. Eppel and Mr. Roos reflected that it would be useful to have a tracking database of projects related to agricultural AD, but not necessarily related to M2M. Ms. Birgfeld explained that such a database would not meet the purpose of M2M, which is to have a database that lists M2M related projects to allow us to track M2M projects and achievements. Mr. Hohenstein offered that existing country projects of interest but not related to M2M should be listed in the country profiles to make others aware of the project without compromising the purpose of the M2M project database. Ms. Birgfeld reported how other sectors have handled the same issue of wanting a more comprehensive list of projects related to their sector. As part of their action plans, the landfill sector is creating a separate database used to track worldwide landfill-related projects that may not be affiliated with M2M, and the coal mining sector has created a comprehensive report that includes this information.

Mr. Hohenstein then offered to draft a project template form for the type of information that should be collected and entered in the database for the agriculture sector. He will present this draft template to the subcommittee in the next few months for group review and comments.

Mr. Eppel suggested that M2M connect with the CDM database as well as other organizations and resources that could contribute project information. He suggested this as a next step action for each country delegate to undertake, with the information eventually being included in their country profiles.

Ms. Tomlinson reminded the group that the audience for M2M country profiles is really the M2M countries, and asked who is the target audience for the database—private investors, government agencies? She indicated that in Australia there is a real desire to support M2M, and stakeholders would like to be able to search for relevant information on projects and activities on the M2M website and be able to confirm which activities are related to the M2M partnership.

Dr. Kishore liked the idea of using the database to showcase specific projects that are looking for help with technology development or financing and act as a service to match up these projects with entities that can help meet their needs and get the projects off the ground.

In response to the entire discussion about the M2M project tracking database, Mr. Eppel suggested the following action items for the next month:

1. Mr. Hohenstein will draft a template for agriculture projects/activities. (Mr. Hohenstein reminded the group that they are welcome to provide input to him about this task.)
2. Each country delegate should identify domestic and international organizations relevant to the M2M agriculture sector and make contact with them. They should find out if there are any ongoing activities in AD or knowledge of programs/projects related to the agriculture sector. Existing databases and practical information would be useful to report back to the subcommittee. Ms. Birgfeld also reminded the group to invite people from these organizations to our next M2M meeting or the Expo, and perhaps invite them to join the project network. Suggested organizations from the group include:
 - Global Energy Partnership (G8)
 - Global Environment Information Center
 - Organization of American States
 - United Nations Food and Agriculture Organization (FAO)
 - World Bank
 - United Nations Development Program (UNDP)
 - Unido
 - Clean Development Mechanism (CDM)
 - National Farmer Stakeholder Organizations
 - Regional Investment Banks
 - Development Agencies
3. Country delegates should identify the most relevant contact for the M2M agriculture sector and provide this information to the ASG.

Ms. Birgfeld finished this agenda item with a few more announcements from the ASG regarding the upcoming newsletter, EPA grants (previously mentioned during the USA country profile presentation), and the availability of translated M2M materials in Russian, Chinese, and Spanish.

Review and Adoption of the Draft Action Plan

Mr. Eppel chaired the discussion of the action plan. First he opened the floor to general comments and feedback about the draft action plan. Mr. Hohenstein said that the action plan provided a good basis for discussion, and reminded the subcommittee that this is a living document which will need to be updated periodically. Mr. Hohenstein wanted to make sure that the workshop outcomes and context of the Expo are reflected in the action plan. Lastly, Mr. Hohenstein expressed a need to get together again as a subcommittee before the Expo; he suggested a conference call, perhaps with video capability.

Ms. Tomlinson said that the case studies presented at the workshop made a big impact on her and can be an important tool to show the success of M2M in the future. She suggested that we may want to have a template to summarize case studies and post on the website for use by investors and policy makers. The case studies would provide information for people who may be familiar with GHG, but maybe not AD in agriculture. In response, Mr. Hohenstein suggested that the M2M website show 4 to 5 case studies with different AD models, scales, and applications; based on the case studies presented at the workshop, it wouldn't be difficult to round up example case studies. Mr. Eppel replied that DEFRA will provide a report with descriptions of each of the presentations from the workshop, so we will have this information soon. Mr. Eppel added that

case studies or project demonstrations are part of the requirement from the agriculture sector to have at the Expo. Dr. Kishore pointed out that we need a consistent template for case study summaries to make them uniform. Ms. Johnston suggested that in addition to the case study summaries, M2M provide outreach materials to explain M2M, AD technology, and details about the case studies.

All or Cross-Cutting Themes

Mr. Eppel then directed the action plan discussion towards the summary table at the end of the plan, starting with the “all/cross cutting” theme and the status of outstanding country profiles. Ms. Gwaltney updated the group that Brazil had recently finalized their country profile, Ecuador is in the process of translating their profile from Spanish to English, and China would turn in a text country profile as soon as possible after the meeting. Other countries with outstanding profiles include Colombia, Germany, Italy, Mexico, Nigeria, the Republic of Korea, Russia, and Ukraine. Mr. Eppel suggested that the subcommittee analyze all of the country profiles to identify policy implications. Some of this was achieved through the workshop, but the UK will take the lead on looking more in depth at the country profiles to make sure nothing has been overlooked. Mr. Hilbert offered to make a checklist with the additional information that the subcommittee has decided to add to country profiles.

In response to the action plan item to contribute to the partnership Expo, meeting participants generally agreed that it would be a good idea to meet in spring or summer 2007 to develop a draft agenda for the 1 ½ day agriculture workshop that the subcommittee is offering at the Expo. Mr. Hilbert offered to organize a meeting in Argentina in May 2007, to which M2M stakeholders will be invited to showcase projects. He suggested that this workshop could be co-located with the next subcommittee meeting.

Mr. Hilbert then suggested that the subcommittee add another theme and activity to the action plan, titled “human resources.” Mr. Hilbert is concerned about the lack of resources dedicated to AD in some countries and thought that the M2M partnership should play a role in organizing resources of universities, research institutes, and people knowledgeable about AD to disseminate information to the wider M2M and agriculture community. Mr. Hilbert suggested two action items for this new theme:

1. Each country delegate should identify research and technologies under development for AD in their country. This information should be communicated to the subcommittee at the next meeting and eventually be included in country profiles.
 - Ongoing research in AD
 - Scholarships
 - Educational institutions related to AD
 - Training/educational opportunities
2. The agriculture subcommittee should organize training sessions and educational opportunities to share this information.

Dr. Kishore echoed Mr. Hilbert’s concern about a lack of education and said that the lack of education and information about AD is a huge problem in India. Ms. Birgfeld reminded the group that M2M does not anticipate taking the role of an educational organization, but rather can help disseminate useful information to interested parties.

At this point in the meeting, Mr. Eppel called for a lunch break, after which the subcommittee reconvened to continue discussing the action plan table.

Technology

Mr. Eppel introduced the “technology” theme from the table and said that many items under this heading had already been discussed during the meeting or workshop. He mentioned that R&D is a theme from the workshop that has proven to be important in the agriculture sector. He summarized the group’s previous discussion about identifying educational institutions that do R&D, and the aforementioned collaboration on R&D. Mr. Hilbert reminded the group that they had agreed to share R&D information through the country profiles. Ms. Tomlinson, Mr. Eppel, and Dr. Monreal echoed the need to indicate R&D needs as well as ongoing projects in the country profiles. The group decided on a two-stage plan regarding R&D:

- Stage One: collect information on the current R&D activities and needs in each country (to be shared at the next subcommittee meeting and eventually included in country profiles).
- Stage Two: get experts together to agree on an R&D plan for the agriculture sector

The subcommittee would like this plan to identify where R&D could benefit real AD projects, and have applied R&D support the M2M partnership. Dr. Kishore cautioned that when it comes to R&D, scaling up pilot AD plants is not always successful. Ms. Birgfeld suggested that we include a roundtable discussion of “R&D Needs” as part of our agriculture sector workshop at the Expo. Mr. Hilbert agreed and suggested that each country do some leg work before the Expo to identify the R&D activities and needs in their country. Mr. Hilbert also suggested that the subcommittee discuss R&D issues at the next meeting in May 2007. Mr. Martire and Mr. Eppel agreed that the EU energy program, FP-7, should be included in our R&D contacts. Mr. Eppel offered that DEFRA would take the lead on making that contact.

Finance and Economics

Mr. Eppel began the group discussion about finance and economics with a statement that the UK will hold a domestic training session on carbon trading finance in Spring 2007. The report from this training session will be made available in the future to the M2M agriculture subcommittee.

Mr. Eppel also suggested that the agriculture subcommittee give guidance about finance strategies and options to identify the best ways of thinking about finance. Ms. Birgfeld pointed out that although carbon trading is a hot issue at the moment, these agriculture AD projects have enough other benefits that they can be financially viable without carbon trading. Dr. Kishore added that education about AD finance is needed for investors as well as project developers.

Mr. Eppel summarized the discussion on this theme by reminding the group that the DEFRA report from the previous days’ workshop would be available soon and will include the finance issues discussed at the workshop; also DEFRA will provide a report from the carbon trading training session they plan to hold in the future. Mr. Eppel suggested that the subcommittee return to this topic in our upcoming 2007 meetings in Argentina and China.

Policy

Mr. Eppel opened the floor for discussion on the “policy” theme of the action plan. Group consensus was that the main policy priority should be getting reliable and proven standards for how to calculate baseline GHG emissions. Mr. Eppel suggested the following 3-step action plan for this task:

1. Pull together currently available calculation methodologies.
2. Compare these calculation methodologies.
3. Design a common accounting framework for the benefits of AD based on the best elements of these methodologies.

Mr. Hohenstein offered to take charge of step one, pulling together a summary of the available calculation methodologies. He will complete this task in the next 2 to 3 months and the subcommittee will be able to tackle steps two and three at the next meeting.

Another important policy issue that was brought up is quality control of AD products (i.e., digestate standards). Mr. Andrews suggested that countries report their level of progress to the subcommittee in regard to coming up with standards for using digestate as a fertilizer. Mr. Hilbert reminded the group that digestate standards are not only a matter of certifying the quality of the fertilizer product, but also related to human health and biosecurity issues. Dr. Monreal cautioned that uniform global or even national standards are difficult to devise because digestate varies so much based on AD feedstocks; he suggested that policy may need to reflect different standards for human health, water quality, or other specific issues.

Dr. Monreal emphasized the importance of life cycle analysis in the role of policy, which is something that could be promoted through M2M. Mr. Eppel affirmed that life cycle analysis is vital in accounting for all the benefits of AD throughout the entire process. This type of analysis also helps policy makers determine the best way to incentivize the use of AD (e.g., subsidizing projects to increase supply or providing tax breaks to increase demand for AD products). Adding to the general policy discussion, Ms. Lima reminded the group that it is important to first understand the policy climate in place and how certain legislations, taxes, or programs either help or hinder the goal of AD. We must understand how policies affect AD use and know what constitutes a supportive policy framework for AD. Mr. Hilbert suggested that policy issues should also be included in the country profiles. Ms. Tomlinson suggested that each country delegate identify the major policy successes and impediments in their country and share this information with the subcommittee at our next meeting. Mr. Eppel offered that the Organization for Economic Co-operation and Development (OECD) has a database with policy information on environmental issues; this could be a source of information for the agriculture subcommittee on policy issues.

In summary, Mr. Hilbert reminded the group that the workshop report will help flesh out what has been learned internationally about policy related to AD. Ms. Birgfeld announced that the ASG will update the subcommittee at our next meeting with a final list of what information should be included in the country profiles.

Outreach

Mr. Eppel opened this discussion theme with a question about what else should be included in the M2M website. Mr. Hilbert suggested that portions of the site be translated into Spanish and other languages as appropriate. Meeting participants discussed who would be responsible for the translation efforts. Mr. Eppel asked each country to identify what information on the website would be useful to translate, and then take charge of getting those materials translated, working in concert with the ASG. Ms. Birgfeld asked the group to consider the target audience(s) of the website and be strategic about selecting information to be translated. Ms. Tomlinson suggested that the case studies may be useful to translate, as they are accessible to farmers and policy-makers alike.

Partnership Expo, Wrap-Up and Next Steps

Mr. Eppel confirmed that the group had already discussed the partnership Expo during agenda item six. Also the subcommittee had agreed that the next meeting would be in Argentina in May 2007, and would include some sort of workshop prior to the meeting. Mr. Eppel suggested a teleconference as a next step in March 2007. Mr. Eppel thanked his co-chair Mr. Hilbert and everyone for attending the workshop and subcommittee meeting and said how pleased he was with the momentum of the agriculture sector of M2M. The meeting was adjourned around 2:30 p.m.

Action Items from this Subcommittee Meeting

- The UK will take the lead on looking more in depth at the country profiles to complete the subcommittee's analysis of country profiles to identify policy implications.
- Mr. Hohenstein will draft a template for agriculture projects/activities and submit it to the subcommittee in 2-3 months.
- Mr. Hilbert will write a checklist of items that should be included in future versions of country profiles based on the discussions during the meeting.
- Mr. Hilbert will also take the lead on organizing the next workshop and subcommittee meeting in Argentina for May 2007.
- Each country delegate has the following responsibilities to prepare for the next meeting:
 - Identify domestic and international organizations relevant to the M2M agriculture sector and make contact with them. Identify the most relevant contact for each organization regarding the M2M agriculture sector and provide this information to the ASG. (DEFRA will take the lead on making contact with the EU energy program, FP-7, to be included in our R&D contacts.)
 - Identify ongoing research, educational institutions, technology development, scholarships, and training opportunities related to AD in their country. Report this information at the next subcommittee meeting.
 - Identify the R&D activities and needs for each country.
 - Enter M2M projects and activities into the project tracking database.
 - Identify information on the website that would be useful to translate, and take charge of getting those materials translated, working in concert with the ASG.
- Items for the Subcommittee to address at the next meeting:
 - Creating a template for case studies to be featured on the M2M website and at the Expo
 - Creating an agenda for the agriculture workshop to be held at the Expo
 - Discussion of R&D issues and creating an R&D plan for the M2M agriculture sector
 - Comparing the baseline calculation methodologies that Mr. Hohenstein will report to the subcommittee, and design a common accounting framework for the benefits of AD based on the best elements of these methodologies.
 - Sharing the status of digestate or other AD standards in each country
 - Discussion of policy issues regarding AD: major policy successes and impediments in each country. (Include a status update on the development of digestate standards.)

ANNEX 1:

Agriculture Subcommittee Meeting Attendee List

Mr. Jeremy Eppel, Department for Environment, Food, and Rural Affairs, UK– CO-CHAIR
Mr. Jorge Hilbert, National Institute of Agricultural Technology, Argentina – CO-CHAIR
Ms. Erin Birgfeld, Environmental Protection Agency, M2M Administrative Support Group, USA
Ms. Abby Gwaltney, Eastern Research Group, Administrative Support Group, USA
Ms. Heather Tomlinson, Department of Agriculture, Fisheries, and Forestry, Australia
Ms. Magda Aparecida de Lima, Brazilian Administration of Agricultural Research, Brazil
Ms. Aimee Johnston, Agriculture and Agri-Food Canada, Canada
Dr. Carlos Monreal, Agriculture and Agri-Food Canada, Canada
Mr. Jingming Li, China Biogas Society, China
Dr. V.V.N. Kishore, Energy and Resources Institute, India
Mr. Luigi Mauro Martire, Ministry of the Environment, Land, and Sea, Italy
Mr. Phillip Andrews, Department for Environment, Food, and Rural Affairs, UK
Mr. Bill Hohenstein, United States Department of Agriculture, USA
Ms. Kelsi Bracmort, United States Department of Agriculture, USA
Ms. Barbara De Rossa-Joynt, US State Department, USA
Mr. Kurt Roos, Environmental Protection Agency, USA
Ms. Okwuoma Jane Nwoke, Women Foundation for Agriculture, Environment, Health and Housing, USA/Nigeria*

**Ms. Nwoke is a project network member.*

ANNEX 2

M2M AGRICULTURE SUBCOMMITTEE MEETING 1 DECEMBER 2006, UNITED KINGDOM

AGENDA

Time	Topic	Reference Documents
9:00 – 9:10	1. Welcome and Introductions	
9:10 – 9:15	2. Opening Statements and Review of Meeting Goals	
9:15 – 9:20	3. Adoption of Sub-committee Meeting Agenda	Meeting Agenda
9:20 – 10:15	4. Country Statements and Reflections on Previous Day's Workshop Each country to provide an overview of their country profile and any insight into how what they have learned in the workshop will influence the country's approach to biogas in agriculture in the future. (3 to 5 minutes for each country representative)	Country Profiles
10:15-10:30	Break	
10:30 – 11:00	Country Statements and Reflections (continued)	Country Profiles
11:00 – 11:40	5. Project Network Member Statements and Reflections on Workshop <ul style="list-style-type: none">• PN members have an opportunity to present their interest in the Partnership and how they think the Partnership can most effectively assist with project development.	
11:40 – 12:00	6. Update from the Administrative Support Group	
12:00 -13:00	Lunch	
13:00– 14:30	7. Review and adoption of the draft Action Plan <i>Countries should review the draft Action Plan and come prepared to discuss and agree to act on specific items in the Action Plan.</i> <ul style="list-style-type: none">• Actions will address key barriers and solutions to project development under each of the following themes:<ul style="list-style-type: none">○ Technology○ Finance and economic○ Policy constraints○ Outreach and education○ Project identification and development	Draft Action Plan
14:30 – 15:00	8. 2007 M2M Partnership Expo: The Sub-committee will be briefed on preparations for the 2007 Partnership Expo, to be held in Beijing, and in particular consider how best to: <ul style="list-style-type: none">• Develop a thematic conference track for Agriculture sector• Identify, solicit, and promote projects to feature at the Expo (and support feasibility studies for project sites)• Develop additional guidance for project submissions	
15:00 – 15:15	9. Wrap-up and Next Steps <ul style="list-style-type: none">• Timing and location of next sub-committee meeting (anticipate one meeting in the first half of 2007 to check on progress of the Action Plan and make final plans for the Expo in October 2007)	